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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,422	12/31/2000	John J. Williams JR.	60053	9879

26327 7590 10/04/2004

THE LAW OFFICE OF KIRK D. WILLIAMS  
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EXAMINER

ELALLAM, AHMED

ART UNIT PAPER NUMBER

2662

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/752,422

Applicant(s)

WILLIAMS ET AL.

Examiner

AHMED ELALLAM

Art Unit

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-26 and 30 is/are allowed.
- 6) ☒ Claim(s) 1-20 and 27-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/31/2000.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 4 , 7 and 22 are objected to because of the following informalities:  
  
In claim 7, the phrase "the barrier transition" lack antecedent basis".  
  
In claim 4, the phrase "said unique sequence numbers" lack antecedent basis, the plural form of "numbers" does not have antecedent, in the claim.  
  
Claim 22 depend from self, it should be depending from claim 21.  
  
Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.  
  
In claim 11, it is not clear what is meant by updating the current value of the destination state with the identifiable state". More specifically, the phrases "the current value" and "the identifiable state" lack antecedent basis, meaning of the claim is vague and indefinite.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-19 and 27-29is rejected under 35 U.S.C. 102(e) as being anticipated by Dunning et al, US (6,760,307).

Regarding claim 1, with reference to figure 1, Dunning discloses a method comprising:

A destination node B (receiver) for receiving plurality of packets from a source node A, wherein if a congestion occur, a receive buffer of the receiving node fills up, and packet are lost, and as soon as the receiver buffer start moving packets, it opens up room for additional packet to be received, wherein the receiver check the sequence number for recovering dropped packet due to congestion (or error) and any subsequent packet by sending a NACK (non-acknowledgement) message to the transmitting node for retransmission . See column 3, lines 36-67 and column 4,lines 1-67 and column 5, lines 1-1-8. (Examiner interpreted the state of the receiver prior to the congestion as the claimed maintaining a destination state in a destination network, the destination state being in a first state; and the packet received before congestion as the claimed

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receiving, in the destination, a first set of packets of a plurality of packets belonging to the first state, and the congestion occurrence (receive buffer fill-up) as the claimed receiving a barrier indication belonging to a second state, and the request (NACK) for the packet dropped due to congestion (or received in error) as the claimed manipulating at least one packet of the first set of packets in response to the received barrier indication).

Regarding claim 2, Dunning discloses if a packet is NAKed (not-acknowledged) the packet is resent. See column 5, line 4-8.

Regarding claim 3, with reference to figure 2, Dunning discloses a fabric X that couples node A and B, wherein X includes a send/receive buffer that enables X to ACK/NAK data received from node A and to resend data to B without requiring data to be sent from A upon receipt of a NAK from node B. (Examiner interpreted the node X as the destination (from the point of view of node A), and since the claim does not specify where the barrier indication is received from, nor the destination node is the final destination, the storing of data at the X node is interpreted as the claimed storing the at least one packet in the destination until the barrier indication is received).

Regarding claim 4, Dunning uses sequence numbers to identify disordered packets. See column 4, lines 37-60. (Claimed each of the first set of packets includes a unique sequence number within the first set of packets, and wherein the first set of packets are sent or forwarded from the destination in an order based on said unique sequence numbers). (Examiner interpreted the node X of figure 2 as the destination node, and since the X node works as a proxy to the source node in case of errors or

congestion, as discussed above in claim 3, node X would ultimately forward packet to node B based on the sequence numbers in a similar fashion as node A).

Regarding claim 5, Dunning discloses transmitting by the source node the packet that was dropped or received in error. See column 5, line 4-8. (Examiner again interpreted the dropped or erroneous packet as the claimed packet in the second state, and has the same sequence number before being dropped or subject to errors).

Regarding claim 6, Dunning discloses that in the event that the sender A has sent packets that were dropped, the first dropped packet will be NAKed and therefore resent from that packet on. See column 5, lines 2-8. (Claimed manipulating the at least one packet includes resequencing the at least one packet).

Regarding claim 7, (Examiner interpreted the Nack that is received by the X node of figure 2 as the claimed barrier transition is received in a packet or a signal over a control or a data line).

Regarding claim 8, Dunning discloses that when the local buffer space is filled at the receiver B through a switch or router or switch/router, additional packet will be lost. See column 4, lines 61-67. (Claimed receiving the barrier indication includes receiving and aggregating a plurality of messages received from a plurality of elements of the network). (Examiner interpreted the buffer reaching its capacity as being the trigger for the second state and that read on the claimed aggregation of messages as part of the barrier indication).

Regarding claims 9 and 10, Dunning discloses that the fabric X can be single switch, a multiple switch, a multiple link etc... See column 5, lines 49-57.

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Regarding claim 12, Examiner interpreted the source node transmission of packets only once based on the received positive acknowledgment as being the claimed maintaining a source state in the source of the network).

Regarding claim 13, Dunning discloses that packets have sequence numbers as indicated above with reference to claim 1, in addition Dunning disclosed that node X (node X, figure 2) are able to receive packet and Nack messages. (Claimed the plurality of packets includes data and control packets).

Regarding claim 14, Dunning discloses that the fabric X can be single switch. etc... See column 5, lines 49-57. (Claimed the network includes a packet switching network).

Regarding claim 15, Dunning discloses that the fabric X can be a multiple switch, etc... See column 5, lines 49-57. (Claimed the network includes a packet switching)

Regarding claim 16, Dunning discloses that the invention can be used in packet switching system. See column 5, lines 49-57.

Regarding claim 17, Dunning discloses a router for implementing the invention as indicated in claim 1. See column 5, lines 49-57

Regarding claim 18, Dunning discloses a machine-readable medium having stored thereon a plurality of executable instructions for implementing his invention. See Dunning, claims 22, 29 and 35.

Regarding claim 19, Dunning discloses a packet switch for performing the method as indicated with reference to claim 1, wherein the packets are independent (different sequence number).

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Regarding claims 27-29, Dunning discloses with reference to figure 2, a packet switching system comprising:

A destination node B (receiver) (or node X) for receiving plurality of packets from a source node A, wherein if a congestion occur, a receive buffer of the receiving node fills up, and packet are lost, and as soon as the receiver buffer start moving packets, it opens up room for additional packet to be received, wherein the receiver check the sequence number for recovering dropped packet due to congestion (or error) and any subsequent packet by sending a NACK (non-acknowledgement) message to the transmitting node for retransmission and sending ack when receiving packets without errors or in sequence (claimed propagating barrier acknowledgment messages as in claim 29), the node X including a single switch or multi switch etc. See column 3, lines 36-67 and column 4, lines 1-67 and column 5, lines 1-1-8. (Examiner interpreted the source node with transmit buffer queues and node x being a switch or multi switch or a switch/ or links or router in combination with the plurality of executable instructions (Dunning claims 22-41) as the equivalent means claimed, because the state of the receiver prior to the congestion is regarded as the claimed maintaining a barrier state in a plurality of component, and the congestion occurrence (receive buffer fill-up) that triggers the (NACK) request for the packet dropped due to congestion (or received in error) to be retransmitted, as being the claimed determining whether or not to send packets indicating a particular barrier state from a particular component of the plurality of components based on a current barrier state maintained by the particular component).



***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dunning in view of Verma, US (6,418,477).

Regarding claim 6, Dunning discloses substantially all the limitations of parent claim 19, except it doesn't specify that the plurality of independent sets of packets are identifiable based at least on a priority or type of traffic.

However Verma discloses in the same field of endeavor, independent set of packet that have Qos constraint (claimed identifiable based on priority).

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to have the packet of Dunning comprising Qos constraint as taught by Verma so that time sensitive data can be given priority in routing decision. The advantage would be the accommodation of different type of traffic such as voice, video, fax etc., making the system of Dunning more attractive to varied segment of industry.

***Allowable Subject Matter***

8. Claims 21-26 and 30 allowed.

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**Conclusion**

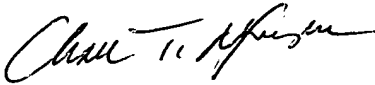
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Dunning et al, US (6,683,850); Rathonyi et al, US (6,532,211)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM  
Examiner  
Art Unit 2662  
Thursday 30, 2004

  
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